

Spill of 16 Liters of Hydrochloric Acid

Failure of Primary Barriers: Due to a forklift puncture or operator error, four 4-L bottles of 36 weight percent hydrochloric acid break, resulting in an unconfined spill. An earthquake or other natural phenomenon could also cause this accident.

Effects of Other Barriers/Mitigative Features: This accident is assumed to occur at the PDCF loading dock, so the release is unaffected by building filtration.

Range of Possible Releases: The releases from this accident were estimated using the ALOHA Evaporation Calculator for 36 weight percent hydrochloric acid. For average meteorological conditions (2.5 m/s wind speed, 25 °C temperature), a spill diameter of 1.43 m, and a spill depth of 1 cm, the release was estimated to be 0.00641 kg/s of hydrogen chloride. For adverse meteorological conditions (1.7 m/s, 29 °C temperature), a spill diameter of 1.43 m, and a spill depth of 1 cm, the release was estimated to 0.00608 kg/s of hydrogen chloride.